The New England College of Optometry

1985-87 CATALOGUE

The New England College of Optometry

1985-1987 Catalogue

Foreword

This catalog is provided for the limited purpose of providing information to the students of NEWENCO during their course of study.

The College makes every effort to be certain that the catalog is substantially true and correct in content and policy as of the date of publication. It should not, however, be construed as the basis of an offer or contract between the College and any present or prospective student. While to the College's knowledge, the catalog contains no erroneous, deceptive, or misleading statements or omissions, the College retains the right to amend, add or delete any information in the catalog, including any course of study, program or regulation, subsequent to publication thereof. Announcement of such changes are made on a routine basis within the College.

Equal Opportunity Policy

The New England College of Optometry prohibits discrimination on the basis of race, sex, religion, color, creed, marital or parental status, sexual preference, or national origin in the recruitment and admission of students, the recruitment and employment of faculty and staff, and the operation of its programs and activities, as specified by federal and state laws and regulations.

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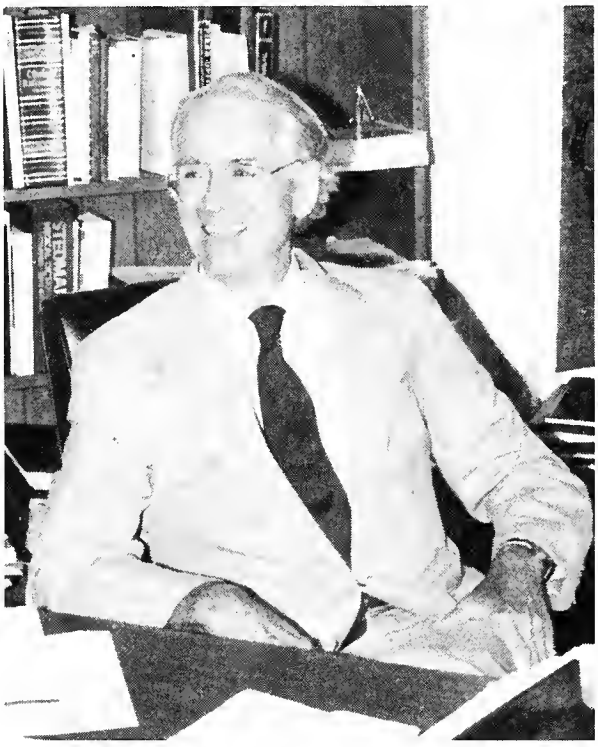


Dr. F. Dow Smith

Dear Student:

We are pleased to welcome you into the academic community of the oldest continuously operating college of optometry in the United States.

We at NEWENCO look forward to working with each one of you in the years immediately ahead. During your stay with us you will learn the didactic and clinical skills required to take your place in our nation's professional optometric community. Beyond these skills we will seek to prepare you for life after academia. Our goal will be to motivate you to actively contribute to the professional, social, business, civic and cultural needs of your community.

Dr. Sylvio L. Dupuis

We have assembled a dedicated staff of professional educators to assist you in developing your didactic and clinical educational skills. We have developed a broad range of clinical settings to allow you the diversity of experience you require to meet the clinical practice demands of modern optometry. We will provide a series of guest lecturers to improve your knowledge of the external environment.

Finally, once you have completed your formal education, we will assist you in finding an appropriate professional placement and provide you with continuing education programs. We will need your support as an active and committed alumnus. We will do our best to earn that support.

Welcome to Boston and NEWENCO.

Cordially,

F. Dow Smith, Ph.D.
President

Sylvio L. Dupuis, O.D.
President-Elect

Lester M. Brackley, O.D.

A Letter from the Chairman of the Board

Dear Student:

Over the years, we at The New England College of Optometry have strived to maintain a standard of excellence in optometric education. Since our doors opened in 1894, the College, under the guidance of a knowledgeable and dedicated group of trustees, has progressed from a two year technical program to a four year post-baccalaureate doctoral program.

As current Chairman of the Board of Trustees, I am pleased to be in the position held by those who have moved the College so far in its 50 year history. And like those who preceded me, I am pleased with the College's position as a top institution of optometric education. We have an excellent faculty, a dedicated administration, and a committed group of Trustees, all with the goal of keeping The New England College of Optometry in the forefront of optometric education.

Yet no College or institution can rest on its laurels. And it is the constant responsibility of the Board of Trustees to be re-evaluating the College's facilities, programs, and services. With goals already set for expansion and renovation of facilities, you may rest assured that by attending the New England College of Optometry, you will not only be attending one which is a leader in its field, but also one which will remain in the vanguard of its profession.

Sincerely,

Dr. Lester M. Brackley
Chairman, Board of Trustees

Introductory Information Chapter 1

The Profession

Optometry began as a legally recognized health profession in the United States at the turn of the century. During the 1920's, a national optometric accrediting body was formed to evaluate educational programs and judge the quality of optometric education. This movement in optometric education closely paralleled similar developments in medical and dental education.

Specific prerequisites are required for admission, with most entering students having acquired a baccalaureate degree. The fifteen schools and colleges of optometry in the U.S. enroll approximately 1,200 students annually.

The Doctor of Optometry (O.D.) degree is a prerequisite for licensure eligibility in every state. Individual states may impose their own additional requirements for licensure—such as state board written examinations, the National Board Examination, and practical examinations in clinical optometry.

Most of the 25,000 optometrists now active serve in private practice as primary health care practitioners—diagnosing and treating visual problems and providing health counseling. Many optometrists, however, practice in clinical settings or are involved in government service, industry, school consulting, teaching or research. Women have been entering the profession in greater numbers; today, they comprise nearly one-third of the enrollment at NEWENCO.

Among the professional organizations which serve the optometric profession and optometric education are: the American Optometric Association (AOA), the American Academy of Optometry (AAO), and the Association of Schools and Colleges of Optometry (ASCO).

The History of the College

To review the development of The New England College of Optometry is to review the development of the profession itself. The College has its beginnings in the mid-1890's, when a Boston ophthalmologist recognized the need for a new profession. In the catalog for the Klein School of Optics, founded in 1885, Dr. August A. Klein wrote that he sought:

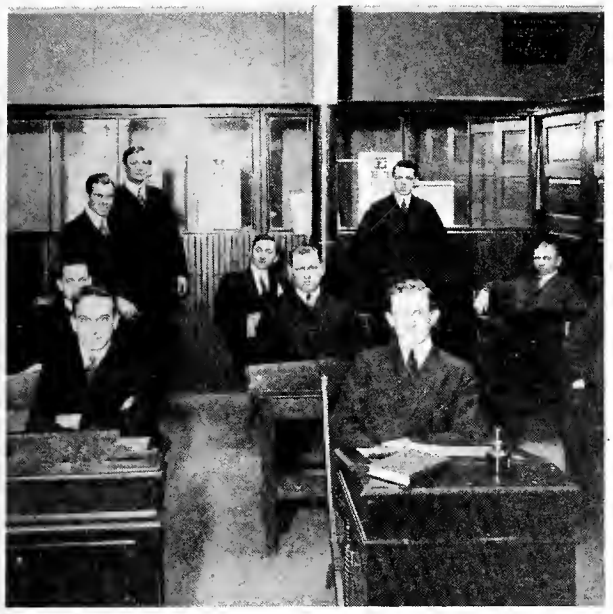
> *"To create an institution which shall be purely optical in its achievements, without coming into conflict with the medical profession, and yet to fill the gap between physician and the optician . . ."*

With Dr. Klein's new school of optics, therefore, the stage was set for the evolution of a new profession: optometry.

The beginnings of both the profession and Dr. Klein's mission were humble enough. In its first year, the Klein School of Optics employed seven instructors who taught classes in optical instruments, refraction and physiology, spectroscopy, anatomy, photographical optics, astronomy, and mechanical optics. The program of study was one year long, and two students were graduated at the end of the first year.

As time went on, the Klein School of Optics and the new profession of optometry gained popularity and support. By 1903, 166 students had completed the Klein program. In 1909, the program expanded to a two-year course, offered as the last two years of high school education.

The Klein School of Optics changed its name to the Massachusetts School of Optometry in 1919 and by 1930 required four years of high school prior to enrolling in the two-year program. But at this time the profession of optometry was making rapid advancements. Practitioners were becoming recognized as the primary providers of vision care, and the scope of the field was expanding. The curriculum at the Massachusetts School of Optometry expanded to three years in 1934 and to four



years in 1939.

By 1950, the institution, by then called the Massachusetts College of Optometry, received the authority to grant the Doctor of Optometry degree. The College changed its name to The New England College of Optometry in 1976 to reflect more accurately its regional constitutency.

Today The New England College of Optometry provides a four year professional curriculum backed by sixty full-time equivalent faculty. The academic and clinical programs have been greatly expanded to reflect the changes in the profession. Ever broadening knowledge in the vision sciences and optometric procedures comprise a vital portion of the coursework. Yet, since the optometrist serves an important member of the health care delivery system, courses are also offered in the health sciences. The clinical education programs tie together the students' theoretical knowledge with actual patient care.

The College still maintains the primary mission of its founder. As expressed in the 1919 catalog, the College

> *". . . aims to give its students a broad and sound training in the science of optometry, a thorough training in the practice of optometry, to uplift the science of optometry to the highest standard, and to make useful, practical and successful optometrists."*

The Facilities

The College's main classroom building, specialty clinic and library are located on Beacon Street in Boston's historic "Back Bay". This section of the city was at one time a shallow bay. The bay was filled and the reclaimed land area made available for new construction in the mid 1800's, permitting the development of this uniquely beautiful and architecturally significant in-town residential neighborhood.

NAMIAS HALL

This building, named after one of the College's most memorable professors, Dr. Foster Namias, was designed by J.H. Schweinforth and built in 1904. Its interior is distinguished by a spectacular four-story spiral staircase, capped by a circular stained glass window.

Namias Hall houses classrooms, a cafeteria, a lounge, administrative offices and many of the instructional laboratories. The college bookstore is located in this building, and serves students and alumni in providing current texts in vision and related sciences, as well as ophthalmic equipment.

THE SPECIALTY CLINIC

This building, adjacent to Namias Hall, was designed by Little and Brown and constructed in 1899. The building now houses specialty services for Pediatric Vision, Low Vision and Rehabilitation, Electrodiagnostic Services, and Vision Services for the Hearing Impaired.

The Pediatric Service provides comprehensive visual evaluations for children and adolescents, including tests for strabismus, amblyopia, perception and low vision. It also provides follow-up care in vision therapy with the input of educational and psychological consultants.

The Low Vision and Rehabilitation Service provides vision care for those who, because of physical condition, age, accident, disease or birth defect, have extremely poor eyesight uncorrectable by ordinary means.

The Electrodiagnostic Service utilizes special electronic testing to determine the status of various visual problems. Electro-

retinograms (ERG) and electro-oculograms (EOG) are two of the tests available through this service.

The Woody Brown Clinic, a service aimed at providing vision care to the hearing impaired, offers a full range of vision services. Those involved with patient care are trained and competent in the use of American Sign Language.

THE LIBRARY

The College library building was constructed in 1894. It was the childhood home of Emily Sears, who later became Mrs. Henry Cabot Lodge. Its opulence reflects the tastes of the wealthy elite of Boston at that time. The interior is outfitted with hardcarved wooden paneling, marble fireplaces, and handpainted gilt wallcoverings.

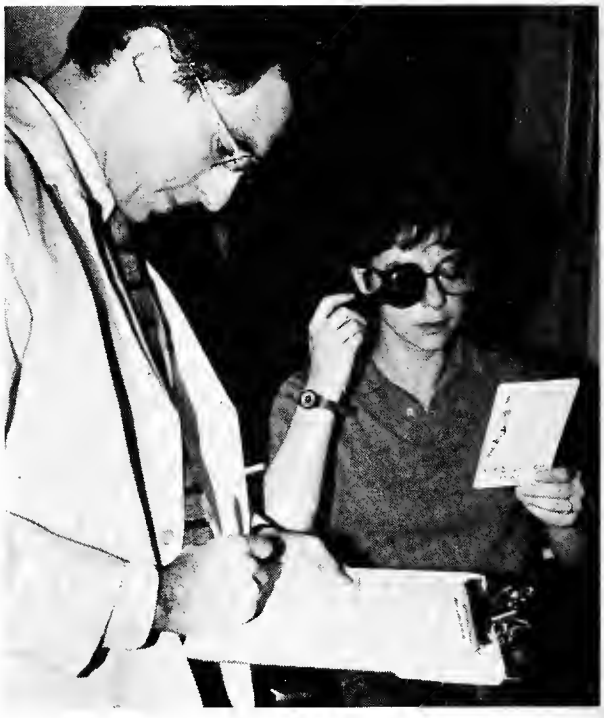
The Library houses an extensive collection of materials relating to vision care in both print and non-print formats. There are also rooms for quiet reading, areas for small group study, and carrells equipped with audio-visual materials. Reference services include access to many computerized data bases.

THE BOSTON EYE CLINIC AT KENMORE (BECK)

The Boston Eye Clinic, a general vision service center operated by the College, is located in nearby Kenmore Square. Services of the Clinic include primary vision care, dispensing services, contact lens services, and specialized services in ophthalmology, color vision, ocular photography, and binocular vision.

AFFILIATED EXTERNAL CLINICS

All of the clinics operated by the College serve as elements of the clinical education program. However it should be kept in mind that educational facilities at The New



England College of Optometry are not limited to those mentioned above.

One of the most important additions to the College's resources are the nearly thirty external clinical affiliates. These external sites are major components of the clinical education program available to fourth-year students. They are located primarily in the Greater Boston area, but others are located throughout the United States. Also, affiliations exist with Hadassah University Hospital in Jerusalem, Israel, and U.S. Army Medical Centers in West Germany.

A more complete description of these external clinical sites and of the entire clinical education program at the College is found in Chapter Two.

Academic Programs

Chapter 2

The Role of Optometric Education

Optometrists are health care professionals who are specially educated and licensed to examine, diagnose, treat and manage conditions of the human visual system. The major goal of the educational program in optometry is to produce a health care practitioner who has appropriate knowledge, skill and competence to fulfill the role of delivering primary ocular and vision care. This includes the ability to detect early signs of ocular, neurological, behavioral and systemic health problems for purposes of referral, patient counseling, or treatment in consultation with other health practitioners.

Optometric education therefore is comprised of a broad-based curriculum in the vision and basic health sciences, as well as clinical training appropriate to the above goal.

After four years of combined academic and clinical training, graduating students become doctors of optometry—individuals prepared to meet the ocular and visual needs of their patients skillfully and confidently. Optometrists function as primary vision care professionals ready to interact with other health care providers to improve the human condition.

Educational Objectives

In keeping with the role of optometric education outlined above, The New England College of Optometry has established the following goals for its educational programs:

— to provide an educational environment which ensures intellectual growth and scholarly development;
— to provide education in the basic health sciences in order to foster understanding of the mechanisms which affect both the normal and diseased human state;
— to provide education in the vision sciences so the student can come to understand the mechanisms underlying normal and abnormal vision and to appreciate the methodology used to diagnose and treat human visual conditions;
— to provide the student with clinical optometric measurement skills, and through supervised clinical experiences, equip the student with a knowledge of ophthalmic devices and their applications, the skills used in patient interviewing and counseling, and the ability to make sound clinical judgments;
— to inculcate the attitudes and skills needed to detect diseases of the visual system and to recognize the early signs of high-incidence disease that may or may not affect the visual system;
— to familiarize the student with general and ocular emergency procedures;
— to provide the knowledge, skills and attitudes that will enable the optometrist to serve as a community resource in matters of applied visual science, disease prevention, and sound health practices;
— to enable the detection and referral of patient problems that require attention by an optometrist with special knowledge and experience in fields such as pediatric, rehabilitative, or environmental optometry;
— to acquaint the student with modes of optometric practice and practice management techniques.

The Four-Year O.D. Program

The four-year curriculum is comprised of four basic elements: the vision sciences, the basic health sciences, optometric theory and practice, and clinical experience. Each makes its contribution to the development of a competent, trained professional capable of solving problems of the human visual system.

The curriculum in the vision sciences provides knowledge in optics and an understanding of the structure and function of the visual system. To that end, the content of the curriculum is presented within three general areas: optics, physiological optics and ocular neuroscience.

Courses in the basic health sciences provide the student with an understanding of the normal and abnormal functions of the human organism. Background is provided in the fundamental biochemical and biophysical mechanisms and the physiological and pathological processes.

Optometric theory and practice provides students with a background for the specific skills, clinical insights, and patient-handling capabilities required of optometrists. Coursework emphasizes general characteristics of human vision problems; measurement of the ocular refractive state; properties and use of ophthalmic lenses, devices and appliances; assessment of binocular status; detection of ocular and systemic diseases; clinical diagnosis; and optometric therapy.

Clinical experience enables the students to become competent patient care professionals who can integrate scientific knowledge with clinical insights to solve visual problems. It begins in the lecture/laboratory setting during the first year, and progresses to direct patient contact during the second, third and fourth years. The preceptorship method is used throughout the program. It calls for close initial supervision, which is gradually relaxed as the student develops greater clinical proficiency and assumes more responsibility. The role of the preceptor slowly changes from that of a supervisor to that of a consultant.

The first two elements of optometric education, the vision and basic health sciences, are concentrated in the first two years of study. Some initial attention is also given to optometric theory and practice. From year to year the emphasis gradually changes, with optometric practices and clinical experience playing a larger part of the educational process by the third and fourth years.

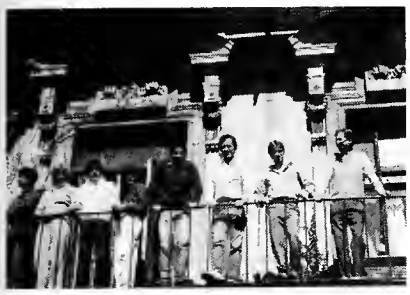
The First Year

Courses

FALL QUARTER
Geometric Optics (4 credits)
Psychophysics (3 credits)
Ocular Anatomy (6 credits)
Cellular Physiology/Biochemistry/Molecular Pathology I (4 credits)
Optometric Theory and Methods I (5 credits)
Health Care in the U.S.A. (2 credits - 2 lectures)

WINTER QUARTER
Ophthalmic Optics (4 credits)
Visual Perception (3 credits)
Neuroanatomy (4 credits)
Cellular Physiology/Biochemistry/Molecular Pathology II (2 credits)
Systems Physiology (3 credits)
Optometric Theory and Methods II (5 credits)

SPRING QUARTER
Visual Optics (3 credits)
Ocular Physiology and Visual Neurophysiology (4 credits)
Systems Physiology (3 credits)
Microbiology, Immunology and Genetics (2 credits)



Optometric Theory and Methods III (5 credits)
Epidemiology (2 credits)

Educational Plan

Study in the visual sciences commences with ocular anatomy, embryology, and the neuroanatomy and neurophysiology of the sensory and motor pathways of the visual system. Simultaneously, students learn about visual perception and the problems in subjective testing of vision. The foundation for more advanced topics is provided with introductory courses in geometrical and physiological optics.

In the basic health sciences, emphasis is placed on the biological sciences, such as biochemistry, histology, endocrinology, systems physiology, immunology, and microbiology.

The coursework in the vision and basic health sciences make up a majority of the material covered in the first year. Optometric theory and practice is introduced in the first quarter and builds a base for clinical experience integrating the optometric and health sciences.

The Second Year

Courses

FALL QUARTER
Special Topics in Optics (4 credits)
Visual Neurophysiology (3 credits)
Pathophysiology (2 credits)
Mechanical Optics (4 credits)
Optometric Theory and Methods IV (4 credits)
Introduction to Clinical Practice (2 credits)
Introduction to Ocular Disease I (3 credits)
Patient Psychology: Childhood and Adolescence (2 credits)

WINTER QUARTER
Ocular Myology (3 credits)
Radiometry/Photometry/Colorimetry (1 credit)
Normal and Abnormal Development of Vision (3 credits)
Pathophysiology (2 credits)
Patient Psychology: Adulthood and Old Age (2 credits)
Visual Space Perception (3 credits)
General Pharmacology (3 credits)
Introduction to Ocular Disease II (3 credits)
Introduction to Clinical Practice (2 credits)

SPRING QUARTER
Anomalies of Binocular Vision (4 credits)
Contact Lens Theory and Methods (2 credits)
Monocular Sensory Aspects of Vision (5 credits)
Sensory and Motor Anomalies (3 credits)
Patient Psychology: Counseling the Patient and the Family (2 credits)
Ocular Pharmacology (3 credits)
Clinical Ocular Pharmacology (1 credit)
Introduction to Clinical Practice (2 credits)

SUMMER
Clinical Practice (2 weeks)

Educational Plan

Study in the visual sciences includes the physical aspects of electromagnetic radiation and the principles of the measurement and specification of light. Presentation of the concepts relating to the understanding of visual perception encompasses the study of basic visual attributes, such as color, pattern and movement, and adaptation.

The basic health sciences are oriented toward the physiological and biomedical sciences, with coursework in medical genetics, pathophysiology, and psychology. Other topics provide for a basic understanding of the mode of action of pharmacologic agents and the systemic effects of various drugs.

Through material in optometric theory and practice, students acquire an in-depth understanding of the ametropias and biocular and accommodative anomalies. They are introduced to methodologies for

evaluating motor and sensory anomalies and assessing the status of binocularity; and receive a background in contact lenses, ocular disease and clinical optics.

During the second year the application of the student's scientific knowledge and optometric skills begin to be practiced in actual clinical settings. In the clinic, students train under the direction of a preceptor, learning to correlate optometric findings and developing clinical insights into the treatment and management of visual problems.

The Third Year

Courses

FALL QUARTER
Contact Lens Theory and Methods (2 credits)
Ocular Disease (3 credits)
Clinical Medicine for Optometrists (3 credits)
Pediatrics (1 credit)
Evaluation of the Child (2 credits)
Clinical Management of Binocular Accommodative Anomalies (4 credits)
Rehabilitative Optometry (3 credits)
Basic Clinical Practice (2 credits)

WINTER QUARTER
Contact Lens Theory and Methods (3 credits)
Ocular Disease (3 credits)
Clinical Medicine for Optometrists (3 credits)
Pediatrics (1 credit)
Learning Disabilities (2 credits)
Clinical Management of Strabismus and Amblyopia (4 credits)
Rehabilitative Optometry (3 credits)
Basic Clinical Practice (2 credits)

SPRING QUARTER
Ocular Assessment and General Medical Emergencies (2 credits)
Visuo-Neurological Dysfunction (2 credits)
Selected Readings in Optometry (1 credit)
Current Topics in Optometry and Health Care (6 credits)
Health Care Quality Assurance (1 credit)
Practice Development and Administration (4 credits)
Geriatrics (1 credit)
Electrodiagnostics (1 credit)
Basic Clinical Practice (2 credits)

Educational Plan

Topics in the vision sciences include the development of vision, how anomalies occur, and ocular pharmacology. In this year, students study in more detail the ocular and systemic diseases, and rehabilitative, pediatric and environmental optometry, each with an increased emphasis on clinical exposure. Also, an in-depth review of binocular anomalies and their management is presented.

In the clinics, students refine their skills in diagnosis, case analysis, prescription, binocular vision assessment and therapy, patient management, and the interdisciplinary approach to patient care. Students acquire clinical skills related to general health assessment; develop a more thorough understanding of clinical pharmacology; and come to appreciate the role of the primary health care practitioner. They learn to apply the principles of clinical epidemiology and the skills of a primary health care professional to patients with previously undetected health problems.

The Fourth Year

SUMMER/FALL/WINTER/SPRING QUARTERS
Contact Lens Clinical Practice (4 credits)
Primary Clinical Practice (16 credits)
Specialty Clinical Practice (16 credits)

Educational Plan

The clinical experience culminates with three twelve-week rotations at any of the over twenty-five settings affiliated with the College. These include community and hospital-based settings. Rotations are also available in the clinics operated by the College which offer general, contact lens, pediatric, rehabilitative, and electrodiagnostic services. Refer to page 20 for the current list of affiliated clinics.

Course Descriptions

Anomalies of Binocular Vision

Diagnosis, classification, and treatment of heterophorias including epidemiology and etiology, binocular refraction, motor evaluation, graphical analysis, fixation disparity, and introduction to treatment procedures.

Basic Clinical Practice

With continued guidance and supervision, the student assumes increased levels of responsibility for patient care and application of more advanced skills in patient interviewing, decision-making and problem-solving. The student is introduced to management of patients with binocular dysfunction, eye disease, ocular photography, and participates in screenings in the community.

Cellular Physiology/Biochemistry/ Molecular Pathology

Structure and function of proteins, carbohydrates and lipids with special emphasis on genetic codes, energy transfer, and membrane chemistry, as applied to the generation of ocular disease.

Clinical Management of Binocular Accommodative Anomalies

The course begins with a presentation of an organized approach to analysis of optometric data which leads into a classification of common accommodative and non-strabismic binocular vision problems. Each entity is discussed in terms of symptoms, signs, etiology, and clinical management. Vision Therapy is emphasized as a treatment approach for these anomalies. Designing, implementing and managing a vision therapy program are discussed in detail. The laboratory portion of the course is designed to familiarize students with vision therapy instrumentation.

Clinical Management of Strabismus and Amblyopia

An organized approach to the evaluation of a strabismic and/or amblyope is stressed. All associated anomalies such as eccentric fixation and anomalous retinal correspondence are discussed in terms of etiology, signs, sumptoms, significance and management. Vision therapy as a treament procedure for these conditions is stressed and discussed in detail. The laboratory portion of the course is designed to familiarize students with testing and therapy procedures used with these patients.

Contact Lens Clinical Practice

The theory and laboratory aspects of contact lenses presented in the didactic contact lens course are transferred into direct clinical practice. Each student spends part of two quarters in the contact lens service where he/she works directly with faculty in the provision of contact lens care. Evaluating, fitting and follow-up care are provided with many forms of conventional hard, oxygen-permeable hard, and soft contact lenses.

Lectures and laboratory are concerned with the various elements of hard and soft contact lenses and other lens materials; verification of specifications, lens handling, fitting procedures, diagnostic techniques and dispensing; corneal physiology.

Current Topics in Optometry and Health Care

An invited lecture series designed to provide an update on recent developments in the profession and to supplement the overall curriculum. Guest lecturers from outside the profession are included, providing an insight into other health disciplines and community health issues.

Electrodiagnostics

Diagnosis of functional and organic defects of the eye and of vision by means of the electroretinogram (ERG), electro-oculogram (EOG), and visual-evoked response (VER). Lectures and demonstrations.

Epidemiology

Study of he determinants of disease as well as other variables, including the behavior of health care providers and patients, that determine health outcome.

Evaluation of the Child

Presents a structural approach to evaluating children from infancy through adolescence.

General Pharmacology

The objective of this course is to cover in depth the basic principles of general pharmacology and pharmacodynamics of drug absorption, distribution, and metabolism. Keeping in line with the aim of the course in allied health fields, the clinical aspects of drugs will be stressed. Some of the topics discussed in this course will serve as a basis for better understanding of ocular pharmacology. The course aims to give the optometry student a good working knowledge of most of the commonly used drugs by physicians. Systemic and ocular side-effects of drugs will be stressed.Finally, this course will better prepare the student-optometrists to utilize diagnostic pharmaceutical agents effectively.

Geometric Optics

The following topics are presented: image formation by reflection and refraction in mirrors, lenses and prisms; analysis of thin lens combinations and thick lenses in terms of cardinal points; limitation of rays by apertures; and aberrations of optical systems and the theory of optical instruments.

Geriatrics

This course is designed to familiarize students with basis concepts in gerontology and geriatrics that are relevant to their future professional careers. Lectures and readings will address a broad range of topics in aging ranging from the biological to the social and economic that will place the issues of health and disease in old age in perspective in relation to the wider contexts of health care and health policy in the United States.

Health Care in the U.S.A.

Description of the larger health system and the optometrist's relationship to it through the disciplines of history, economics, law and clinical medicine.

Health Care Quality Assurance

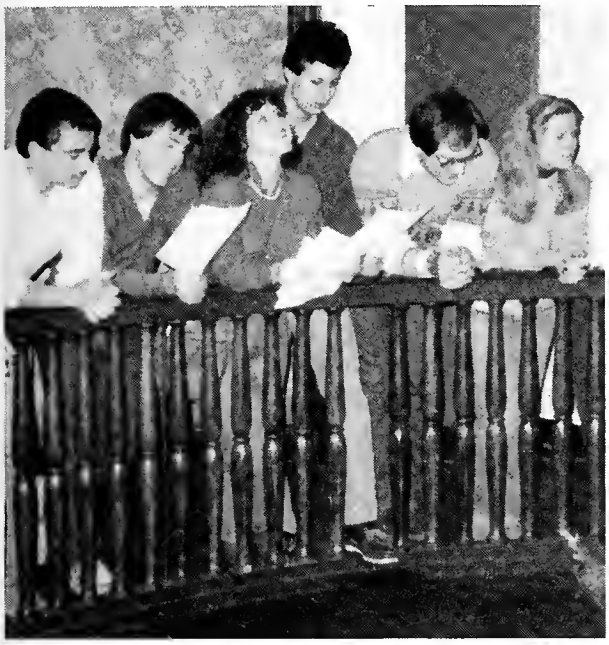
A view of "quality assurance" as a multi-dimensional process which, at minimum, requires accurate measures of the technical competence of the provider and mechanisms to improve the level of practice.

Introduction to Clinical Practice

Through observation and participation in the examination process, the student clinician is introduced to direct patient care. Closely supervised by a preceptor, students gradually increase their responsibilities commensurate with increasing levels of competence and development of skills. The student experience is designed to acquaint him/her with the doctor-patient relationship, basic methods of examination and patient management.

Introduction to Ocular Disease

This course follows the first year Optometric Theory and Methods course, expanding upon the area of ocular health assessment. It serves to introduce the student to ocular disease processes and the technical skills necessary for evaluating the health of the eye. Laboratories will emphasize advanced clinical techniques, including the use of diagnostic pharmaceutical agents, visual fields testing, binocular indirect ophthalmology, gonioscopy, applanation and indentation tonometry, macular integrity testing, and advanced biomicroscopy techniques.



Learning Disabilities

Presents an interdisciplinary team approach for the child with school-related difficulties.

Mechanical Optics

Lectures and laboratory cover ophthalmic lenses and frames, ophthalmic fitting, adjustment and repair procedures, prescription ordering, verification, inspection, lensometry and procedures for aphakia and ptosis.

Microbiology, Immunology and Genetics

A basic clinical review of microbiology, immunology and genetics with an emphasis on mechanisms of gene expression in disease, infectious illness, and the newer developments in transplantation, auto-immunity, etc.

Monocular Sensory Aspects of Vision

The sensory aspects of vision and visual perception are considered in terms of their physical and/or physiological bases. Topics included are the absolute threshold, functional properties of rods and cones, light and dark adaptation, spatial aspects of vision including brightness discrimination, visual acuity and the contrast sensitivity function, temporal aspects of vision including afterimages, critical fusion frequency, and subfusional flicker phenomena. The characteristics of normal and defective color vision are discussed along with an examination of the evidence for the principal theories of color vision. The clinical methods applied to the assessment of color vision status are included.

Neuroanatomy

The gross anatomy of the peripheral and central nervous systems with emphasis upon the visual pathways and associated tracts. Functional aspects and physiological correlates are described, and complete circuits for information flow and processing are identified. Special attention is paid to the cranial nerves and their peripheral distribution. Includes a laboratory in which a sheep's brain is dissected and models of human brains are studied.

Normal and Abnormal Development of Vision

Anatomy and physiology of early visual development and effects of visual deprivation on this development. Characteristics of sensory-motor anomalies, including strabismus and amblyopia, that relate to abnormal development. Maturation of visual perception and visual learning in infants.

The macroscopic and microscopic anatomy of the eye, ocular adnexa and extraocular muscles is integrated with clinical correlations and anatomical parameters of the optometric examination. Ocular embryology presents the morphology and chronology of the development of the eye and orbital structures. Assigned readings and laboratory exercises provide a basic understanding of ultra-structures and the gross anatomy of the head.

Ocular Assessment and General Medical Emergencies

Selected topics in ocular disease, in-depth methodologies for the symptom-oriented investigation of ocular disease and appropriate management thereof; ocular emergencies including presentation of overt insult to the eye—foreign bodies, abrasions, lacerations and chemical burns; and management of patients with sudden vision loss, diplopia or ptosis. General emergencies include: dealing with patients with syncope; seizures; acute airway obstruction; hypoglycemia; cerebro-vascular accident; drug-induced collapse and psychiatric disorders; shock and trauma; thermal injuries; intoxications and ingestions; and legal implications of emergency care.

Ocular Disease

Mechanisms in ocular pathology including inflammation, neoplasis, glaucoma and vision loss. Signs and symptons of specific categories of disease including the orbit, ocular adnexa, conjunctiva, cornea, sclera, uvea, lens, vitreous, retina, optic nerve, and neural visual system.

Ocular Myology

Anatomical, physiological, neuropharmacologic, cybernetic and kinematic properties of motor systems related to the intrinsic (iris and ciliary) and extrinsic (extraocular and adnexal) musculature. Methods of measurement and specification of relevant variables.

Ocular Pharmacology

Ocular pharmacology deals with the basic properties, clinical attributes, and practical applications of drugs used in ophthalmic diagnosis and treatment. Principal concern is with those drugs that are applied topically to the eye. Emphasis is placed upon contraindications, precautions, potential drug interactions, dosage and administration, as well as upon possible adverse reactions, both ocular and systemic.

Ocular Physiology and Visual Neurophysiology

Biochemical and biophysical properties of the eye including intraocular pressure and its regulation, aqueous humor, corneal metabolism and transparency, response of the cornea to injury, the function of tears, lens transparency, physical properties and the function of the vitreous, visual pigments and bleaching, and metabolism of the retina.

Ophthalmic Optics

The principles of geometric optics applied to the study of the optical characteristics of ophthalmic lenses including spheres, cylinders, prisms, multifocal lenses, and contact lenses. Design parameters of ophthalmic lenses and their application to the correction of vision defects.

Optometric Theory and Methods I, II, III, IV, V

Theoretical principles underlying the elements of the problem-oriented optometric examination and laboratory practice in basic optometric techniques including visual acuity testing; health, refractive and binocular entrance tests; biomicroscopy; direct ophthalmoscopy; tonometry; lensometry; keratometry; retinoscopy; subjective refraction; management of the ametropias, binocular and accommodative testing; the problem-oriented record system; visual fields; introduction to case analysis; and preparation for introduction to patient care at the Boston Eye Clinic during the second year.

Pathophysiology

An overview of pathologic process and their sequelae pursued through an organ-system approach.

Patient Psychology: Childhood and Adolescence

Human development in relation to clinical optometry; children with special needs and their families.

Patient Psychology: Adulthood and Old Age

Recognizing mental illness, psychogenic eye complaints. Working with patients and families.

Patient Psychology: Counseling the Patient and the Family

Communication skills for the doctor/patient relationship; delivering bad news to patients and families; counseling.

Pediatric Clinic Practice

Students are assigned to clinics, health centers and other settings having a high prevalence of pediatric patients. Experience is gained in the examination of management of small infants, children, children with vision problems associated with other developmental disabilities; patients with strabismus and other congenital and acquired anomalies.

Practice Development and Administration

A course designed to develop an understanding of the feelings, issues, concepts and social values related to successful performance of the optometrists in the profession. It is designed to develop organizational, communicative and management skills so that the optometrist can become knowledgeable and successful in the development, and the administration of a professional practice regardless of the mode of practice.

Primary Clinical Practice

Students are assigned to clinics, health centers and other settings having a high patient flow. Experience is gained in the examination and management of vision problems associated with diverse clinical populations. Students participate in all levels of clinical care on a full-time basis.

Psychophysics

Describes the problems with which the brain must deal in order to see. Material covered includes psychophysics as the data describing the function of sensory systems. Visual information processing is also approached, which describes vision as sequential processes, such as iconic memory, short term memory, long term memory, and recognition.

Radiometry/Photometry/Colorimetry

The measurement and specification of visual stimuli is presented within the framework of photometric and colorimetric concepts. Included topics are the relationship of radiometric and photometric units, photometric measurements, and the principles of illumination. The characteristics of emission of various types of light sources are discussed. The terms and concepts of the CIE system and the Munsell systems of color notation are applied to the measurement and specification of color.

Rehabilitative Optometry

Diagnosis, management and treatment of low vision anomalies caused by the degenerating effects of age, or by disease or injury.

Selected Readings in Optometry

Readings on significant topics within optometry which serve to increase the student's depth and breadth of knowledge.

Sensory and Motor Anomalies

Clinical assessment of visual acuity, macular integrity, the fields of vision, acquired color defects, anomalies of light sensitivity, integrity of the cranial nerves related to the eye, anomalies of the oculosympathetic innervation, papillary reflex abnormalities, non-functional anomalies of accommodation, anomalies of the extraocular muscles, nystagmus, non-comitant strabismus, and anomalies of the adnexal musculature.

Special Topics in Optics

The characteristics of very strong lenses and progressive addition lenses. Scattering and absorption of light, both in the eye and in ophthalmic lenses. Wave properties of light: polarization, interference, diffraction, and their implications in ophthalmic applications. Quantum nature of light; and nature of photochemical interactions; black body absorption and emission.

Specialty Clinical Practice

Students may be placed in multi-disciplinary clinical sites such as health centers and hospitals which offer clinical experience with patients with a broad array of ocular and general health problems. At these sites, students gain extensive experience with other health care providers. Students may also be placed in settings which emphasize special optometric services such as rehabilitative vision care or pediatric services.

Systems Physiology I

The endocrine glands of the human body are discussed in this course, along with their location, respective secretions, physiological action of hormones and pathophysiology of each gland. Emphasis is placed on ocular manifestations of endocrine disorders. The course also deals with nutrition, vision and its relationship to systemic diseases. Ocular manifestations of deficiency and toxicity of vitamins are highlighted.

Systems Physiology II

Blood, hemodynamics of circulation, cardiovascular physiology and pathopsysiology, body fluids and their regulation are covered in depth in this course.

Visual Neurophysiology

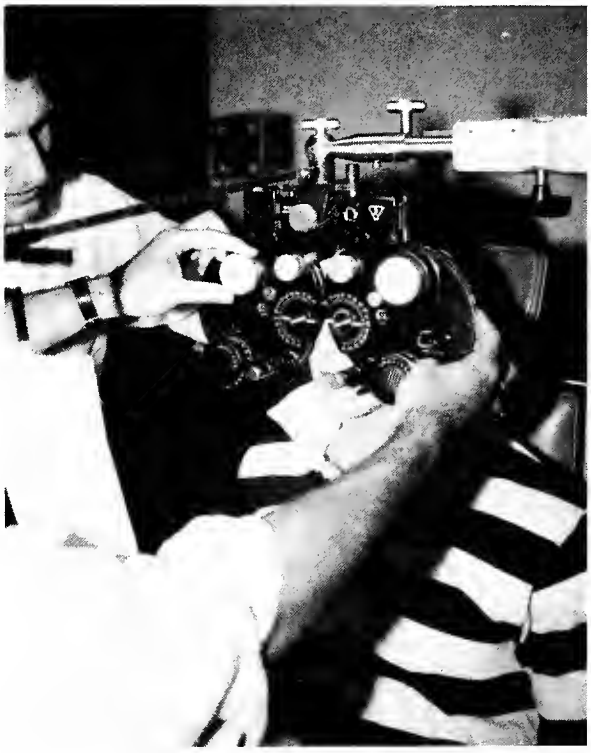
The transduction, coding and transmission of visual information and the relationship of neural events to the structure of the visual system and to perceptual phenomena. Visual behavior in terms of the integration of information from different regions of the brain.

Visual Optics

The study of the eye as an optical instrument. Subject matter includes optical and physical constants of the eye; theoretical aspects of refractive anomalies; mechanisms of accommodation; and the function of the pupil as an aperture; depth of field and optical aberrations of the eye; and the optics of ophthalmic instruments.

Visual Perception

Classical visual perception is discussed through topics such as size, depth and brightness constancy; motion and direction perception; Gestalt psychology; and the plasticity of perception. Clinical material is introduced where appropriate. Psychophysics as methodology emphasizes the theory of threshold and clinical



methods for determining them, signal detection theory as the theoretically superior way to study sensory function.

Visual Space Perception

Elements of spatial orientation including oculocentric and egocentric orientation. Considered are the empirical cues to depth, binocular correspondence, the horopter, Panum's area, fusion, rivalry, stereopsis, stereoacuity, and the neurophysiological aspects of binocular vision, and the nature of aniseikonia and its measurement.

Visuo-Neurological Dysfunction

Topics in the field of visuo-neurology, including transient loss of vision, eye pain, headache, optic nerve disease, supranuclear disorders of eye movement, and non-ocular neurological symptomology.

The Affiliated Clinical System

The clinical training of optometric students is one of the most important aspects of optometric education. To this end, The New England College of Optometry boasts over twenty-five affiliated clinical settings. These external clinics include community-based health care centers, hospitals, and Veterans Administration medical centers.

Among the affiliates, as of spring 1985:

Brighton Marine Public Health Center
Brighton, Massachusetts

Brooks Army Medical Hospital
San Antonio, Texas

Columbia Point Health Center
Dorchester, Massachusetts

Connecticut Visual Health Center
Bridgeport, Connecticut

Cotting School for Handicapped Children
Boston, Massachusetts

Dimock Community Health Center
Boston, Massachusetts

Dorchester House Multi-Service Center
Dorchester, Massachusetts

East Boston Neighborhood Health Center
East Boston, Massachusetts

Gesell Institute of Child Development
New Haven, Connecticut

Hadassah University Hospital
Jerusalem, Israel

Health America
Broward, Florida

Jacksonville Eye Care Center
Jacksonville, Florida

Mary Imogene Bassett Hospital/
Department of Ophthalmology
Cooperstown, New York

Newport Naval Regional Medical Center
Newport, Rhode Island

Noel Center
Lancaster, Ohio

North End Community Health Center
Boston, Massachusetts

Omni Eye Center
Atlanta, Georgia

Omni Eye Center
Chattanooga, Tennessee

Perkins School for the Blind
Watertown, Massachusetts

South Boston Community Health Center
Boston, Massachusetts

South End Community Health Center
Boston, Massachusetts

University of Massachusetts/Amherst
University Health Services
Amherst, Massachusetts

Veterans Administration Medical Center
Bedford, Massachusetts

Veterans Administration Medical Center
Brockton/West Roxbury, Massachusetts

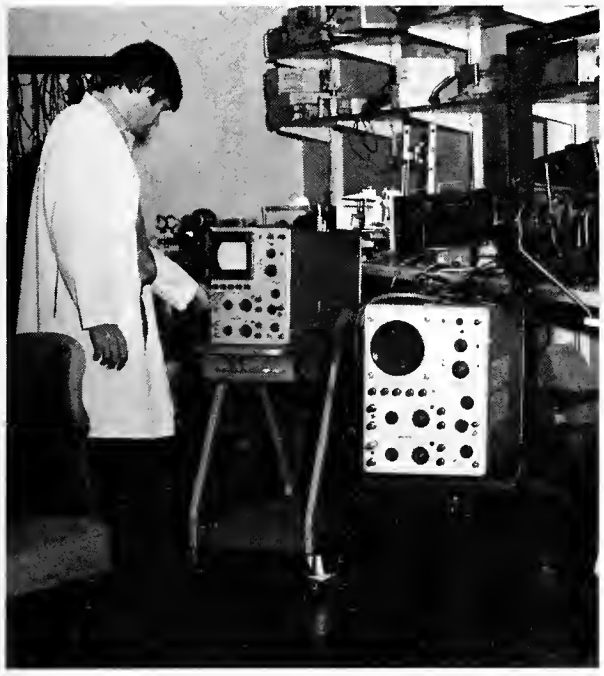
Veterans Administration Medical Center
Newington, Connecticut

Veterans Administration Medical Center
Providence, Rhode Island

Veterans Administration Medical Center
Eastern Blind Rehabilitation Center
West Haven, Connecticut

Veterans Administration Outpatient Clinic
Boston, Massachusetts

Western Massachusetts State Hospital
Westfield, Massachusetts



The Accelerated O.D. Program

In the summer of 1972, The New England College of Optometry instituted a new program, which provides accelerated optometric education leading to the O.D. degree for qualified candidates with a Ph.D. degree in the sciences.

The program is administered by a program director and an admissions committee. The program begins in early June and continues for eight consecutive quarters compared to the total of twelve quarters of enrollment for the four-year program.

The requirements for admission are an earned doctorate in one of the biological, behavioral or physical sciences, a complete application and a personal interview. The Optometry College Admission test (OCAT) is required of all applicants as a part of the admissions application. No specific pre-requisite courses are required. Occasionally, remedial study is recommended for those lacking background coursework in certain basic sciences.

In reviewing the credentials of applicants, the admissions committee examines the level of academic and professional achievement and motivation for an optometric career.

Curriculum

The requirements of the program are completed within twenty-four months which involves eight consecutive quarters of attendance. Presently there are two vacation periods, occurring in July and December. The schedule for both the two-year and four-year programs are in phase with each other and many of the classes in the two-year curriculum are taken jointly with those enrolled in the four-year program. The content of the curriculum is essentially the same as that in the four-year program, though certain courses proceed at a more rapid pace, and a greater reliance is placed on independent acquisition of knowledge and use of library resources. It is presumed that students in the two-year program will have already gained some of the general didactic goals of the four-year curriculum as a result of either their prior graduate study or professional activity.

Students in the two-year program spend the same amount of time in clinical rotations as do the students in the four-year program. The two-year students enter the clinic at the beginning of their second quarter and complete their clinical experience in the final quarter of residence.

General Information on Academic Programs

General Information For Foreign Applicants

The New England College of Optometry invites applications from foreign students. Admission is dependent upon the competitiveness of the applicant's credentials. The standard application process should be used, and candidates should be prepared to lend assistance in the evaluation of transcripts from foreign universities.

Foreign students entering the four-year program must meet the same admissions requirements include a minimum of three years of undergraduate preparation, or 90 credit hours, calculated in the usual or customary manner, at a college or university whose credentials are found acceptable by the Admissions Committee. Earned credits must include the same specific course prerequisites as resident applicants. Foreign students should understand that most applicants hold a bachelors degree. Applicants are also required to take the TOEFL examination, to demonstrate a working knowledge of English, and it will be expected that a minimum score of 500 will be achieved. A minimum of four years of academic studies at The New England College of Optometry are required to earn the O.D. degree.

Special Emphasis Program for Graduates of Foreign Optometry Schools

Any graduate of a foreign optometry school may apply for a special course of study. Special programs of study may be designed in one or more of the following areas: primary optometry, pediatric optometry, rehabilitative optometry, contact lenses, and ocular pathology. A Certificate of Advanced Study will be awarded upon successful completion of the program. This coursework may not be credited toward the O.D. degree, and the program does not prepare the student to sit for licensure in optometry. There is no specific curriculum in any of the special emphasis areas. A program will be arranged with each student on an individual basis, from existing courses, based on availability of courses and/or programs, and on availability of space within the courses. This is a non-degree program.

Advanced Standing for Graduates from Foreign Optometry Schools

Foreign students who have successfully completed study at a foreign optometry school are eligible for advanced standing in The New England College of Optometry's Doctor of Optometry program. The point at which the candidate enters the professional program will be determined on an individual basis, but in no instance will advance placement result in less than two years of full-time study. Successful completion of the program may require achieving passing scores in selected sections of the National Board examinations.

The decision to accept candidates with advanced standing will rest with the College's Admissions Committee in co-operation with the Dean of Academic Affairs. Decisions will be dependent upon the ability of this group to evaluate the level

of the optometric program completed by the candidate. Candidates should be prepared to provide documentation outlining the foreign optometry school's curriculum, grading standards, and level of competition. An assessment of clinical skills is also required.

Paraoptometric Programs

Paraoptometrics are allied health care personnel who support the work of optometrists as participating members of the health care team. They may be optometric technicians or optometric assistants. The New England College of Optometry offers programs for both.

The Optometric Technicians Program requires two years of training and leads to the Associate in Science degree. During the first year the candidate carries out a program of general studies fulfilling specific prerequisites. These first year credits are not offered at NEWENCO, but can be earned at any accredited two year or four year institution. Where possible it is recommended that the planned first year program be approved by the NEWENCO admissions office to assure a smooth transition into the second year. This second year, conducted at NEWENCO, is professional in nature and includes courses in optometry, anatomy, vision sciences, management, contact lenses and other areas.

The Optometric Assistant Program requires one year of training and leads to certification as an Optometric Assistant. Students complete the same coursework in optometry but not the general academic coursework. This provides the students with the needed training in a well structured academic setting. The program is designed for the mature person who wishes to augment general skills with specific technical training to provide a basis for re-entry into the job market.

Further program, tuition and financial aid information is available from the Director of the Paraoptometric Program.

Post-Doctoral Residencies

The College offers a number of post-doctoral residencies. These are programs for the graduate optometrist who desires more advanced training in a specialized area of optometry. Each residency is offered in conjunction with a Veterans Administration Medical Center or Outpatient Clinic. Specialities addressed are Hospital Based Optometry and Rehabilitative Optometry.

Applicants for residency positions should be graduate optometrists with excellent scholastic records, strong clinical potentials, and an interest in dealing with extraordinary visual problems.

Applicants should direct inquiries to The College's Dean of Academic Affairs.

Continuing Education

The College considers continuing education a major responsibility and is dedicated to serving the needs of members of the profession throughout their careers.

Courses, seminars, lectures, and practicums are offered through its Office of Continuing Education to keep practitioners up to date with advances in health care, science, and clinical techniques relevant to the practice of optometry. A rounds program is presented as an adjunct to certain lecture programs, giving the practitioner an opportunity to review the latest diagnostic techniques in an academic clinical setting. Programs are sometimes offered in New England and other parts of the country with the cooperation of local optometric societies and other colleges of optometry.

The New England College of Optometry is a recognized provider of continuing education by all states having education requirements and by the American Optometric Association.

Admission To The College Chapter 3

Admissions Policies

The New England College of Optometry seeks to admit students who are firmly committed to, and have sound aptitude for, improving the human condition through the profession and practice of optometry. Our admissions process is based upon a comparison of qualifications among all those who apply. There are no absolute standards, only those set by the quality of our applicants. We consider a variety of credentials, but it is clear that a careful evaluation of prior achievement and future promise are at the heart of the decision.

Among those factors which we examine critically are the academic credentials of the applicant. All obtainable data is examined, including the following, which we have found particularly helpful:

— grade point averages
— SAT scores
— OCAT (Optometric College Admission Test) scores
— content of courses pursued in pre-optometric college education
— extra-curricular activities

The ability of an individual to perform competently and maturely as a professional optometrists cannot be measured solely by quantified academic achievement. In an effort to insure that the students accepted at the New England College of Optometry will succeed both in their studies at the college and in the profession of optometry, strong consideration will be given to those candidates who demonstrate:

— strong commitment to learning
— high sense of social concern
— respect of human dignity
— strong motivation to become an optometrist
— ability to understand the responsibility and social obligations of professionals

Therefore, beyond demonstrated academic performance, the admissions evaluation will include a careful reading of recommendations and essays submitted as requirements of the application. A vital factor in the application process is the required admissions interview, by which a subjective assessment is made of such qualities as:

— ability to communicate and articulate
— leadership potential
— personality and demeanor
— motivational attitude

It is by carefully examining all of the above elements that the New England College of Optometry seeks to select for admission those individuals who have the highest potential for academic success in the optometric curriculum, and will best represent the school and the profession as practicing optometrists.

Undergraduate Preparation

Applicants to the Doctor of Optometry program need to demonstrate at least three years of undergraduate preparation, or the credit hour equivalent. Within this period of study the student should have credits for the following specific coursework:

Chemistry (with lab) . . . . . Two semesters
Biology (with lab) . . . . . Two semesters
Mathematics (including calculus) . . . . . Two semesters
Physics (with lab) . . . . . Two semesters
English . . . . . Two semesters
Psychology . . . . . One semester
Humanities . . . . . Four semesters
Social sciences . . . . . Four semesters

One semester each of statistics and organic chemistry are strongly recommended.

Students who have not earned a bachelors degree may be awarded the Bachelor of Science degree by the College, provided they have completed twenty semester hours of humanities, twenty semester hours of social sciences, and have met other requirements set forth by the College.

The Application Process

The college utilizes a "rolling" admissions policy, such that applications are considered continuously throughout the admissions period, roughly in the order in which they are completed. Using prior experience as a guide, comparative criteria for the new class are established early in the process. Once an application is complete and has been reviewed by the admissions committee, the applicant will either be invited for an interview at the college, or advised of failure to meet the admissions criteria. In unusual circumstances, and with prior approval of the Dean of Admissions, the personal interview can be arranged at an off-campus site. However, no application will be considered complete, and no admissions decision will be made, without the personal interview.

Following the interview, candidates should know within two or three weeks the admissions decision. Upon acceptance, a $500 non-refundable deposit will be required within 30 days.

Some applicants may be asked to accept waiting list status. Waiting list is considered when the applicant demonstrates relative weakness in meeting some of the admissions criteria, but presents qualifications which may allow possible acceptance later in the admissions period. Upon notification, candidates must signify acceptance of waiting list status if they wish to remain in active consideration. Should a waiting list candidate later be offered admission, the $500 non-refundable deposit will be due within 30 days.

The Complete Application

Application materials are accepted after August 1 of the year prior to the year of desired admission. There is no deadline for completing application files, but, due to the rolling admissions process, those seriously desiring acceptance are urged to have their files completed by March 31 of the year of admission. Chance of admission is reduced after this date.

A complete application file consists of:

1. A completed application form along with the $50.00 non-refundable application fee.

   The College's application has been designed to obtain as much background information about the candidate as possible. Clearly, the candidate has little control over much of the data requested—schools and colleges attended, courses taken, work history and the like are fairly inflexible. However, several essays offer the opportunity to set the application apart from others. The candidate is urged to use this segment of the application to point out any trends in his or her undergraduate academic performance, to explain any scores which are not indicative of actual abilities, or note experiences which will reflect knowledge about and commitment to the profession of optometry.

2. Complete official transcripts from all secondary schools and colleges attended.

   The candidate should be aware that an offer of admissions will very often depend upon the successful completion of courses indicated as "to be taken", such that a final transcript will be necessary as well as those initially submitted with the applications.

3. Scores from the OCAP

   The OCAT is offered twice a year, in March and October, by the Psychological Testing Corporation. 7500 Old Oak Blvd., Cleveland, OH 44130. Registration deadlines are generally one month before the date of the test. While taking the March test will be acceptable

for entrance the following September, candidates are urged to take the October exam. Those who have already taken the test should be sure to write the Psychological Corporation to have test results sent to the College's Admissions Office.

4. Letters of Recommendation

   Most colleges and universities have an interdisciplinary group of faculty whose purpose it is to advise students interested in health careers. This pre-professional evaluation committee prepares, on request, a composite list of recommendations, obtained from faculty members who can honestly appraise the candidate's academic abilities. If such a service is not available from the undergraduate college, two letters from college professors or other appropriate sources, are acceptable. In any event, letters of recommendation should be solicited only from individuals who have had an extended opportunity to evaluate the candidate in his or her academic and personal activities.

   Candidates who have been out of school for a number of years may find it difficult to obtain letters of academic evaluation. In such cases, letters from employers, or others who have worked closely with the candidate will be acceptable.

The Interview Process

Once the above materials have been submitted, promising applicants will be invited to the College for an interview. If such a visit is an extreme financial hardship for the candidate, a request for an off-campus interview may be submitted. However, we prefer that all candidates visit the College, not only so that we may meet them, but also that they can appraise the College, its facilities, its environment, and its surroundings on a firsthand basis.

On the day of the interview, the candidate will meet with at least three members of the Admissions Committee, each meeting lasting between thirty and forty minutes. A student host volunteer will usually give the candidate a brief tour of the facilities, and will join the candidate for lunch. During this time, the candidate is urged to ask the student volunteer any questions about the College and its programs which may not have been answered elsewhere. All student volunteers are instructed to be candid in their conversations. The candidate will also confer with a representative from the Financial Aid Office, where consideration will be given to tuition assistance available, and realistic budgeting.

Following the interview, the candidate should receive notification of the Admissions Committee's decision within two or three weeks.

Securing Admission Upon Acceptance

As mentioned earlier, students offered acceptance will be asked to secure their seats with a $500.00 non-refundable tuition deposit. This amount assures the College that the candidate is serious about attending. It allows the College to quickly determine which of those candidates offered admission will not attend, so that those the waiting list may be offered an opportunity to secure a place in the coming class.

Candidates should also be advised that, following the acceptance of a seat in the entering class, they will be asked to pay their first quarter's tuition in full by June first. The $500.00 will be credited toward this amount.

Reapplicants

The College retains all application files for one year. Should a candidate wish to reapply, a separate reapplication form should be completed. The $50 admissions fee should still be included with the reapplication form.

Transfer Students

When openings in advanced classes permit, the College accepts students currently enrolled in accredited schools or colleges of optometry. Acceptance is contingent upon satisfactory completion of courses equivalent to those at The New England College of Optometry. Transfer credits are accepted only after review of the applicant's optometry school transcript by the Dean of Academic Affairs and the Dean of Student Affairs. Official approval of the transfer and certification of good academic standing is required from the Dean of the optometry school from which the applicant seeks to transer.

Early Admissions and Joint B.S./O.D. Programs

The New England College of Optometry actively seeks affiliations with undergraduate institutions throughout New England which will lead to a combined Bachelor of Science degree and a doctor of optometry degree. Students entering such a program may receive a conditional acceptance into the College as they begin their first year of undergraduate studies. After three years of specific coursework, and providing pre-determined grade point average and OCAT scores are met, these students will enroll at The New England College of Optometry. After the first year of professional study, the student can earn a Bachelor of Science degree.

This program encourages bright, motivated students to design a challenging undergraduate curriculum, allows them to set specific goals, and also saves one year of study toward the doctoral degree. Candidates interested in pursuing such a course should contact the Office of Academic Affairs at the undergraduate school, or the Preprofessional Advisory Committee, to see if they have such an affiliation with The New England College of Optometry.

Veterans' Policy

Eligible veterans are especially encouraged to apply for admission. The New England College of Optometry is approved for study under Public Law 348. Veterans covered by this law are expected to pay all charges in the same manner as non-veterans.

Program for Minorities and Disadvantaged Students

The Optometric Career Access Program (OCAP) is a comprehensive program aimed at increasing the number of minority and disadvantaged students applying to, entering, and graduating from The New England College of Optometry to achieve licensure as optometrists.

The core of OCAP consists of its two summer programs, "Operation Access" and "Operation Success", which provide financial assistance, assistance in sharpening study skills and in research skills.

Operation Access—A four-week program during July and August, which offers fifteen to eighteen college sophomore, juniors, and seniors a series of mini-courses, seminars and a lecture series. Students interested in pursuing a degree in optometry participate in hands-on optometric patient care at NEWENCO—affiliate clinics within the Boston area.

Operation Success—A seven-week program throughout July and August. This program, designed to assist ten to twelve college seniors just prior to their entry into NEWENCO, will help them to further develop the knowledge base necessary to grasp the first-year optometric curriculum. This program puts more challenging emphasis on mathematics and optics.

These two summer programs are offered at NEWENCO at no cost to the student. For further specific information, contact the OCAP office at NEWENCO.

Tuition, Fees, and Financial Aid Chapter 4

Tuition

Tuition is based on the College's total cost of providing optometric education less institutional income from outside sources. For 1985-86, the tuition at The New England College of Optometry was $3,550 per quarter, or a total of $10,650 per year for students in the four year professional program and $14,200 per twelve months for students in the accelerated program ($3,550 per quarter for a two year program of eight quarters).

State Contract Tuition Reduction

The actual tuition paid by entering students is the current tuition less any directly applicable financial support. Much of this support is derived from contractual arrangements between the College and individual states. These contracts reserve a set number of spaces for regional students in the four year program and allow these students to compete for admission only with others from the same state. The value of these contracts varies, but on the average they amount to a tuition reduction of $4,400 per year. Applicants should contact the admissions office to find out if their state has a contractual arrangement with the College.

Fees

Other applicable fees to students include the non-refundable application fee of $50 (to be submitted with the application), the non-refundable tuition deposit of $500 (due within 30 days after admission), and the annual activity fee of $50 (determined annually by the Student Council).

All tuition and fees are due and payable on or before the first day of classes of each quarter, except those of incoming students, which are due by July 1 of the year of entry. Late payments will incur a $25 service fee plus 1-1/2 percent per month of the outstanding balance. No students may

complete registration or attend classes without having paid all charges in full or having made appropriate arrangements to do so with the Dean of Student Affairs.

The College reserves the right to make whatever changes in tuition and fees which may be deemed necessary by the Board of Trustees before the beginning of any quarter.

Other Estimated Expenses, Texts and Equipment

The list below approximates 1985 costs for texts and equipment for the first year student at The New England College of Optometry. Prices may vary slightly, and used texts may be available.

Dictionary of Visual Science, Schapero, $27.75
Visual Optics and Refraction, Michael, $60.00
Sensation and Perception, Goldstein, $27.00
Optics, Fincham, $36.75
Alder's Physiology of the Eye, Moses, $48.75
Berkeley Procedure Notes, Carter, $3.50
Introduction to Ophthalomoscopy, Upjohn, $6.50
Primary Care Optometry, Grosvenor, $78.00
Biochemistry/Cellular Physiology Notes, $4.00
NEWENCO Optometric Procedures Notes, $3.00

Occluder and Red Glass, $7.00
Red Maddox Rod, $5.50
Pin Hole Disc, $1.75
PD Rule, $1.00

Penlight, $1.50 - $2.50
Near Point Card Set, $1.00
Ophthalmoscope, $175.00 to $225.00
Retinoscope, $140.00 to $200.00
(above two instruments available as a diagnostic kit, at approximately $310.00).
Lens Rack/Retinoscopy Rack, $80.00 or $165.00

Refund Policy

Tuition and fees are refunded to the student who withdraws or is dismissed from the College in accordance with the following schedule:

—100% refund (less $500 deposit) if withdrawal is prior to the first day of classes.

—75% refund if withdrawal is during the first two weeks of classes.

—50% refund if withdrawal is between the second and fourth weeks of classes.

—25% refund if withdrawal is between the fourth and eighth weeks of classes.

Financial Aid

Educational programs in the health professions are expensive. Faculty must be highly trained and educated, and thus command high salaries; laboratory and clinical equipment is very costly; and classes are limited in size to assure proper student-teacher ratios.

All this means that the cost of a professional degree will be high, especially at an institution not heavily supported by state funds. Tuition and fees alone, for students in the four-year program, approach $11,000, and living expenses must also be included in the annual cost of education.

Unless you have substantial family and personal financial resources on which you can draw, such high costs are likely to result in sizeable debt. It is, therefore, important that you understand the financial commitment before you make your decision about graduate professional education.

The College administers limited financial aid funds to assist eligible students in meeting their financial obligations. Financial aid officers will work on an individual basis with all eligible applicants to create a package of loans, work-study, and other forms of assistance to help pay their educational costs.

Federal and state financial aid programs change constantly. While every effort is made to include current information in this catalog, it is impossible to guarantee its complete accuracy on a day-to-day basis. Current information may always be obtained from the Financial Aid Office.

Determination of Financial Need

"Financial need" is defined as the difference between the standard student budget computed by the College and your anticipated resources. For the academic year 1985-86, the standard nine month budget for a single student was $18,000. This is a combination of tuition, books, equipment and supplies at $11,840 and a modest living budget of $6,160. This standard budget may be increased by allowable documented expenses such as childcare and uninsured medical or dental costs.

The College awards financial aid on the premise that the responsibility for financing an optometric education lies with the student and, whenever possible, the family. Your estimated resources are therefore a combination of parental contribution and your own savings and summer earnings. The amount of these assumed contributions is determined by GAPSFAS, the Graduate and Professional School Financial Aid Service. Besides these contributions, you are also expected to meet your first $5,000 of financial need with a Guaranteed Student Loan (GSL).

For example, assume you had total resources of $5,450 (parental contribution

of $2,500, personal savings of $2,000, and summer savings of $950). With our budget of $18,000 per academic year, your estimated need would be $12,550. The College would then use $7,550 ($12,550 less $5,000 GSL) as the basis for determining your financial aid award.

Applicants for financial aid, whether new or continuing students, must file the following forms with the Financial Aid Office:

1. A NEWENCO financial aid application.
2. A Graduate and Professional School Financial Aid Service (GAPSFAS) form filled out by both the student (and spouse) and his/her parents. Parental information is required regardless of the applicant's age, marital or income tax status. Obtain the forms from GAPSFAS, Box 2614, Princeton, New Jersey 08541, or from the NEWENCO Financial Aid Office.
3. Copies of the student's (and spouse's) and parents' federal income tax returns.

The College administers three sources of federal aid to students. The *National Direct Student Loan Program* provides 5% interest, long-term, deferred loans. The *Health Professions Loan Program* provides long-term, deferred loans at 9% interest. The *College Work-Study Program* promotes the part-time employment of students. Available job opportunities within NEWENCO are posted. Eligibility for funding from these sources is determined by the Financial Aid Office.

The *Guaranteed Student Loan Program* enables a student with financial need to borrow directly from a bank, credit union or savings-and-loan association. Graduate and professional students may borrow up to $5,000 per year with a total aggregate borrowing limit of $25,000, including loans made at the undergraduate level. The interest rate is usually 8% or 9%, and both interest and repayment are deferred until after the student leaves NEWENCO.

Parent Loans for Undergraduate Students/ Auxiliary Loans to Assist Students (PLUS/ALAS), a program known under two names, allows a graduate/professional student to borrow up to $3,000 per year at 12% interest with a total borrowing limit of $15,000. Payment of principal may be deferred while the borrower is a full-time student. Interest accrues from the date of disbursement but payment of interest may also be deferred at the discretion of the lender.

The *Health Education Assistance Loan* (HEAL) program allows a student to borrow up to $20,000 per year with a total aggregate borrowing limit of $80,000. The average interest rate on HEAL loans in 1984-85 was 13%, but the rate is subject to change quarterly. There is no federal interest subsidy, but payment of principal and interest, which accrues from the date the loan is disbursed, may be deferred while the borrower is a full-time student.

The HEAL and PLUS/ALAS loans are made through participating banks. Applications, however, can be obtained from the Financial Aid Office.

A limited number of NEWENCO half or full tuition remission scholarships are awarded each year. To be eligible to apply for a NEWENCO scholarship a student must be a native-born member of an ethnic minority in the United States. Applications are available in the spring from the Office of Student Affairs.

Other scholarship monies are awarded with eligibility determined by financial need and academic standing. Announcements of these scholarships are made by the Financial Aid Office during the academic year.

Further detailed information on all the above programs and the College's Financial Aid Handbook can be obtained by calling or writing to the Financial Aid Office, The New England College of Optometry, 424 Beacon Street, Boston, MA 02115.

Degree Requirements & Academic Policies 5

Degree Requirements

Students in the four-year professional program may earn one or both of the following degrees:

Doctor of Optometry Degree (O.D.)

The Doctor of Optometry is a professional degree and is a prerequisite for licensure eligibility in the United States. Award of the degree is made by the Board of Trustees upon recommendation of the faculty following the satisfactory completion of the professional curriculum in optometry.

To qualify for the degree; the student must spend at least two academic years in residence at The New England College of Optometry and hold a grade point average not below 2.20 at the time of graduation. Further, no student can graduate with an outstanding of "F", "Remedial", or "Incomplete" on his or her record. The student must make arrangements with each instructor for making up any of the above grades within the subsequent quarter.

Bachelor of Science Degree (B.S.) in Optometry

Students who have not received a bachelor's degree prior to enrolling in the four-year professional curriculum may apply for the Bachelor of Science degree in Optometry. In order to be eligible for this degree, the student must satisfy the following requirements:

1. Hold no prior bachelor's degree.
2. Have successfully completed at least twenty semester hours of Social Sciences and twenty semester hours of Humanities at the undergraduate level.
3. Have successfully completed two years of study at the New England College of Optometry.
4. Have not yet received the Doctor of Optometry degree.

The student fulfilling the above requirements must submit a written request for the Bachelor of Science degree at the beginning of the second year of study. Because a student is no longer eligible for the B.S. degree after graduation from the College, any deficiencies in the undergraduate course requirements must be made up while still enrolled at the College.

Coursework generally falls under the headings of Humanities and Social Sciences according to the following table:

Humanities
Language: ancient, modern
Literature: ancient, modern, theory
Fine Arts
Music
Drama
Philosophy*
Philosophy of History
Historical Biography
Theology
History and Philosophy of Science*

Social Sciences
Psychology
Anthropology
History of Civilization
Geography
Political Science
Economics
Sociology
Criminology
Jurisprudence
Ethnology
Demography
Law
Statistics
History*

*Primarily categorized as shown, but may be classified otherwise, depending on the undergraduate college. Check with your advisor.

Grading & Academic Policies

The following section provides an overview of the grading and academic policies maintained by The New England College of Optometry. It is not inclusive or descriptive of all policies potentially affecting students enrolled at the College. Full documentation of grading and academic policies will be provided to all students at the time of registration in a Student Handbook.

All matters concerning grades and academic policies will be handled by the College's Student Affairs Committee (SAC). This group consists of five members of the faculty who are elected by the faculty; the Registrar and the Dean of Student Affairs, who both serve as ex officio members; and two voting student members who are elected by the Student Council. The Committee members elect their own chairperson. The elected faculty members serve three-year terms that expire on a rotating basis.

Requirements for Academic Promotion

Students are required to meet minimum academic standards in order to advance to the next professional year of study. To move into the second year of study, the student must maintain a cumulative grade-point average of at least 1.90 throughout the first year. The second-year cumulative grade-point average (including the first-year marks) must be at least 2.10 to advance into the third year. An overall grade-point average of 2.20 is required to enter the fourth year.

Students who do not meet the above requirements may satisfy them by: 1) repeating the entire academic year, or 2) by taking the appropriate courses, if offered, during the summer quarter. The institution accepts no obligation to re-offer courses during the summer in which students have received failing grades. Students will only be offered the above options upon recommendation of the Student Affairs Committee or the Dean of Academic Affairs. There is no appeal mechanism for students who do not meet these minimal requirements.

Academic Evaluation Protocol

Action regarding academic difficulties is automatic when a student fails to meet the institution's academic standards. This action will be taken by the Office of the Registrar upon finalization of grades at the end of each grading period according to the following standards:

Academic Warning	**Cumulative GPA**
First-Year Students	1.90 - 2.19
Second-Year Students	2.10 - 2.19

(A designation of academic warning will be removed when the student's cumulative GPA is 2.20 or higher.)

Academic Probation	**Cumulative GPA**
First-Year Students	below 1.90
Second-Year Students	below 2.10
Third-Year Students	below 2.20

(Academic probation is removed when the student's cumulative GPA is equal to or better than the standards for his or her class as outlined above. The student has two quarters to remove probationary status. Failure to do so will result in dismissal.)

Dismissal

The following situations will result in dismissal for academic reasons:

1. A student is on probation for two consecutive quarters.
2. A first-year student receives a GPA below 1.20 for two consecutive quarters.
3. A second-or third-year student receives a quarterly GPA below 1.20.

The office of the Registrar will be the mechanism for the above action through notifying students who fall into the designated categories. The Student Affairs Committee will act as an appeals committee

for dismissals according to procedures outlined in the Student Handbook.

Clinical Evaluation Protocol

All clinical courses are graded on a pass/fail basis according to the following categories:

Honors: Performance one year above expected level.

Pass: adequate performance.

Remedial: marginally inadequate performance.

Failure: inadequate performance.

Incomplete: adequate performance; requirements not complete.

Clinical grades are based on a student's performance relative to the established objectives for the course and reflect the student's knowledge, cognitive ability, technical skill, interpersonal skills and personal characteristics.

Withdrawal from the College or from a Course

Any student may withdraw from the College by informing the Registrar and the Dean of Student Affairs in writing at least two weeks prior to the first day of final exam week. Any decision to reapply for admission after withdrawal must be made by the Dean of Academic Affairs with input by the Student Affairs Committee. Withdrawal in good academic standing does not guarantee re-admission.

Students are not normally allowed to withdraw from individual courses. However, under unusual circumstances, a student may petition the instructor for withdrawal. A "W" grade may be awarded upon determination of the instructor and the Dean of Academic Affairs. Students who drop a course assume the responsibility for completing the course prior to graduation. This responsibility is not shared by the faculty or the administration. Students who do not formally withdraw from a course and yet fail to complete its requirements will receive a failing grade.

Protocol for Unprofessional Conduct

The College reserves the right to terminate the enrollment of any student for what the College faculty and administration consider to be sufficient reason, such as unprofessional conduct. A student dismissed for unprofessional conduct may appeal the dismissal through the Student Affairs Committee. The appeals process is described in detail in the Student Handbook.

Grievance Procedure

It is believed that sound educational policies in conjunction with a practical affirmative action program are the most effective means of ensuring fair and equitable educational opportunities. However, it is also recognized that changing institutional and individual needs, the human element in relations among students, faculty and administrators, and the complexities of personal interaction within the educational environment require mechanisms whereby students can seek redress or adjustment of conditions that affect them.

The College's grievance procedure is outlined to meet this need. A student who feels that he or she has been discriminated against on the basis of race, color, religion, sex, national origin, or sexual preference should detail the grievance in writing to the Dean of Student Affairs. if the issue is incapable of being resolved through informal means, a formal committee shall be created to address the problem.

Problems resulting from misunderstandings or apparent inconsistencies in issues of academic evaluation, performance or misconduct should be brought to the attention of the Student Affairs Committee in writing.

A complete explanation of the College's grievance procedure is found in the Student Handbook.

Student Council

The Student Council is organized to govern the internal affairs of the NEWENCO student body. The council consists of twenty-three voting members: four officers (the President votes to break ties only), four representatives from each class in the four year program, and two representatives from the students in the accelerated two year program. One representative from AOSA also attends the Student Council meetings and is entitled to vote. Council meetings are open to the entire student body.

There are two main areas of responsibility for the Student Council. The first is to process, manage, and allocate student activity fees. Use of these funds includes the sponsorship of various social activities and clubs, including picnics, parties, cruises, hockey, and basketball; management of student photocopier machine and note-taking services; funding of the annual dinner dance, the "Eyeball"; funding of the annual yearbook; funding of AOSA activities and trips; maintenance of the student recreation room and photography room.

The second responsibility is to promote mutual understanding and respect among students, faculty, and administration. As part of this responsibility, the Student Council members participate on the Student Affairs Committee, Long Range Planning, Admissions Committee, Financial Aid Committee, and Curriculum Committee. The President of the Student Council is a voting member of the NEWENCO Board of Trustees and serves as a member of the Executive Council of the NEWENCO Alumni Association.

Tutorial & Counseling Service

The College has initiated an extensive tutorial and counseling service for use by students. The use of the tutorial service is open to any students, however, those who are on academic probation will be required to attend tutorial sessions.

Further academic assistance is available from the student-run note-taking service. A student in each class records and transcribes lectures, condenses the notes, has the professor approve the notes, and copies sets. Other students may "subscribe" to the note-taking service at a nominal fee per quarter, although the cost is offset to some extent by the Student Council.

Basic counseling services are available to all students, and the College maintains a wide list of referral centers should more extensive attention be required.

Social Events at NEWENCO

A number of social events sponsored by the Student Council and partially funded by student activities fees are held each year. In the middle of September is a **school picnic** held in a local park. This is a good chance for members of the first year class to get to know each other and the other students in the school. Softball and volleyball games go on all day and the beer flows freely. The **Christmas Party** is always a lot of fun. Music, dancing, and spirits all add to the enjoyment of the evening.

The Eyeball is a semi-formal dinner held in mid-winter. The event takes place in a ballroom of a local hotel. After a meal, there are door prizes and dancing. Faculty members, students, and staff are seen in a different light out of the classroom and on the dance floor.

The NEWENCO Follies is an annual talent show where students are given an opportunity to entertain. A not quite annual event, but one worth mentioning, is a "fun run" automobile road race around the streets of Boston called the **Retinal Rallye.** It's often held shortly after the start of the new school year, so first year students set an interesting introduction to driving in Boston (a unique experience if you haven't heard about it).

Health Insurance

You can participate in the Blue Cross/ Blue Shield Master Medical Plan through NEWENCO. Services include hospital room and board and intensive care plus podiatric and mental health care. The cost is approximately $350 per calendar year (individual) or $800 per year (family).

The Office of Student Affairs can give

you further details about deadlines for the application and eligibility requirements.

American Optometric Student Association

The American Optometric Student Association (AOSA) is the national optometric student organization. Every student of NEWENCO becomes a member of the AOSA when his or her activity fee is paid. Members receive a National Board Student Handbook, National Board Anatomy Terms Review booklet, AOA senior information kit, AOSA "Foresight" newspaper and other special handouts. AOSA student liaison and the committee chairperson provide input to a variety of organizations including the National Board of Examiners in Optometry (NBEO), Association of Schools and Colleges of Optometry (ASCO), and various divisions of the American Optometric Association (AOA).

Local AOSA activities at NEWENCO include lunchtime seminars, special speakers and films, panel discussions on optometric interests, test files in the Library, and the annual student variety show. Special interest groups serve women in optometry, student couples, and those on armed forces scholarships.

National Optometric Student Association

The National Optometric Association (NOA) is a professional association of predominantly minority optometrists. Their primary objective and concern is the delivery of vision/eye health care to the minority community.

One of the goals of the NOA is to actively recruit minority students into the schools and colleges of optometry and to provide assistance to new graduates, as well as to provide minority optometrists with practice enhancement and updating of optometric knowledge, skills and professional practice, placement, and procurement of financial aid.

Of the 25,000 practicing optometrists nationwide, only about 400 are minorities. Vision-related problems among the poor and minority groups are eight times more prevalent than for the rest of the nation. There are not enough vision-care practitioners to provide proper care for this segment of the population. NOA addresses this problem, and since its founding in 1969, the number of minority optometrists has nearly tripled.

The NOSA is the student branch of the NOA. There is a NEWENCO chapter, which sends delegates yearly to the national NOSA convention.

Volunteer Optometrists in Service to Humanity

Volunteer Optometrists in Service to Humanity (VOSH) sends interested students to countries lacking optometric care for an intensive three or four day vision testing program. Students examine the eyes of local residents and dispense badly needed eyeglasses. Any first, second, or third year students who donate their time to VOSH become eligible in their fourth year to join a group in the Latin American optometric examinations.

Yearbook

The *Reflections* Yearbook is a published account of a class's four years at NEWENCO from a student's point of view. Edited and funded by students, the yearbook has minimal faculty input and tends to fluctuate in size and quality from year to year depending upon student input and interest.

Reflections began in the 1930's and over the decades, it has shifted considerably from its original format and conservative attitudes and goals. For many years, it was the only tie to the past history of NEWENCO and its predecessors.

The yearbook keeps a fully stocked darkroom available for all students to use in exchange for interesting and potentially usable prints. Photographers are especially urged to shoot candids and school shots in exchange for free film. The Yearbook Office is located next to the bookstore.

You can work on *Reflections* for your class by collecting photos and ideas to incorporate into the yearbook.

Faculty, Board & Administration Chapter 7

The Faculty

Full Time, 1984-1985

Nancy Carlson, Assistant Professor of Optometry; O.D., The New England College of Optometry

John Carter, Professor of Optometry; O.D., Pennsylvania College of Optometry; Ph.D., Indiana University

D.M. Chauncey, Assistant Dean and Assistant Professor of Optometry; O.D., The New England College of Optometry; Ph.D., University of California

Larry R. Clausen, Dean of Academic Affairs and Associate Professor of Public Health; O.D., Pacific College of Optometry; M.P.H., University of Michigan

James Comerford, Associate Professor of Physiological Optics; O.D., The New England College of Optometry; Ph.D., University of California

Thomas P. Corwin, Associate Professor of Psychology and Physiological Optics; Ph.D., University of Rochester

Chanel Dufour, Assistant Professor of Clinical Optics

Robert Gross, Instructor in Optometry; O.D., The New England College of Optometry

Susan Haesaert, Assistant Professor of Optometry; O.D., The New England College of Optometry

David A. Heath, Instructor in Optometry; O.D., The New England College of Optometry

Catherine Hines, Instructor in Optometry; O.D., The New England College of Optometry

Lester E. Janoff, Professor of Optometry; O.D., Pennsylvania College of Optometry; M.S. Ed., University of Southern California

Hyman R. Kamens, Professor of Optometry; O.D., Massachusetts College of Optometry

Arnold Katz, Assistant Professor of Optometry; O.D. Massachusetts College of Optometry

Stanley Klein, Professor of Psychology; Ph.D., Clark University

Frank Kozol, Professor of Optometry; O.D., Massachusetts College of Optometry

Daniel Kurtz, Assistant Professor of Optometry; O.D., The New England College of Optometry; Ph.D., University of Michigan

Paul Lappin, Professor of Physiological Optics; O.D., Massachusetts College of Optometry; Ph.D., Indiana University

Richard C. Laudon, Associate Professor of Optometry, O.D., Massachusetts College of Optometry

Glen McCormack, Associate Professor of Optometry and Physiological Optics; O.D., Indiana University; Ph.D., University of California at Berkeley

Eileen McGill, Assistant Professor of Optometry; O.D., The New England College of Optometry

Kathryn B. Miller, Instructor in Optometry; O.D., The New England College of Optometry

Srinivas Natrajan, Associate Professor of Physiology; B.V.Sc., Osmania University, India; M.S., Auburn University; M.S., Massachusetts College of Pharmacy; O.D., The New England College of Optometry; Ph.D., Virginia Polytechnic Institute

Charles Patorgis, Assistant Professor of Optometry; O.D., The New England College of Optometry

Walter Potaznick, Assistant Professor of Optometry; O.D., The New England College of Optometry

Concetta Raciti, Assistant Professor of Optometry; O.D., The New England College of Optometry

Jack Richman, Professor of Optometry; O.D., Pennsylvania College of Optometry

William Sleight, Instructor in Optometry; O.D., The New England College of Optometry

F. Dow Smith, Professor of Optics; M.A., Queens University, Canada; Ph.D., University of Rochester

Joseph Svagdys, Professor of Optometry; O.D., Massachusetts College of Optometry

Frank Thorn, Professor of Visual Science; O.D., The New England College of Optometry; Ph.D., University of Rochester

F. Eleanor Warner, Head Librarian and Associate Professor of Library Science; M.S.L.S., Simmons College

Edmund Walkowiak, Professor of Physiology; Ed. M., Boston University; Ph.D., University of Connecticut

Mark Zorn, Associate Professor of Biochemistry; O.D., The New England College of Optometry; Ph.D., Columbia University

Emeritus Faculty

Ralph Green, Professor Emeritus of Optometry; O.D., D.O.S., Illinois College of Optometry

Foster Namias, Professor Emeritus of Optometry; O.D., D.O.S., Massachusetts College of Optometry

Part Time Faculty 1985-1986

Robert Allard, Assistant Professor of Optometry; O.D., Illinois College of Optometry

John Asarkof, Professor of Optometry; O.D., Massachusetts College of Optometry

Patti Augeri, Instructor in Optometry; O.D., The New England College of Optometry

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Joseph Bickford, Assistant Professor of Optometry; O.D., Massachusetts College of Optometry

J. Andrew Billings, Visiting Lecturer; M.D., Harvard Medical School

Irma Bloom, Instructor in Clinical Social Work; M.S.W., Simmons College

Gregory Bodrie, Instructor of Optometry; O.D., The New England College of Optometry

Richard Bringhurst, Assistant Professor of Medicine; M.D., Harvard Medical School

Stephen Byrnes, Instructor in Optometry; O.D., Massachusetts College of Optometry

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Anthony Cavallerano, Assistant Professor of Optometry; O.D., Massachusetts College of Optometry

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Matthew Garston, Associate Professor of Optometry; O.D., Massachusetts College of Optometry

Ellen Gilman, Instructor in Optometry; O.D., The New England College of Optometry; Ed.M., Boston State College

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Ernest Loewenstein, Associate Professor of Optometry; O.D., The New England College of Optometry; Ph.D., The John Hopkins University

Roderick Lorente, Instructor in Optometry; O.D., The New England College of Optometry

Frederick Mandel, Instructor in Pediatrics; M.D., University of Vermont College of Medicine

Jeffrey Morrill, Assistant Professor of Optometry; O.D. Massachusetts College of Optometry

Gary Moss, Assistant Professor of Optometry; O.D., Massachusetts College of Optometry

Albert Mulley, Assistant Professor of Public Health; M.D., Harvard Medical School

Irwin Nathanson, Assistant Professor of Optometry; O.D., Massachusetts College of Optometry

Stanley Reiser, Visiting Lecturer; M.D., Downstate College of Medicine of the State University of New York

Marc Richman, Associate Professor of Medicine; M.D., Boston University School of Medicine

Donald Robinson, Associate Professor of Optometry; O.D., Massachusetts College of Optometry

Margaret Ronis, Instructor in Optometry; O.D., The New England College of Optometry

Martin Samuels, Assistant Professor of Medicine; M.D., University of Cincinnati College of Medicine.

Clifford Scott, Associate Professor of Optometry; O.D., Massachusetts College of Optometry

Mary Scott, Associate Professor of Optometry; O.D., Massachusetts College of Optometry

Alan Titelbaum, Instructor in Optometry; O.D., The New England College of Optometry

Paulette Turco, Instructor in Optometry; O.D., The New England College of Optometry

Paul White, Professor of Optometry; O.D., Massachusetts College of Optometry

Roger Wilson, Assistant Professor of Optometry; O.D., The New England College of Optometry

Affiliated Faculty 1985-1986

Paul Ajamian, Omni Eye Service, Atlanta, Georgia; O.D., The New England College of Optometry

Richard Apell, Gesell Institute of Child Development, New Haven, CT; O.D., Illinois College of Optometry

Frederick Bloom, University Health Services, University of Massachusetts/ Amherst, Amherst, MA; O.D., Massachusetts College of Optometry

James Brockway, Mary Imogene Bassett Hospital, Cooperstown, NY; O.D. Massachusetts College of Optometry

Richard Calderon, Joslin Diabetes Center, Boston, MA; O.D., Massachusetts College of Optometry

Terrence Donnelly, Veterans Administration Medical Center, Northampton, MA; O.D., The New England College of Optometry

Barry Fisch, Veterans Administration Hospital, Brockton, MA; O.D., Massachusetts College of Optometry

Louis Frank, Psychological Consultant; Ed.D., Boston University

Scott Gartner, Health America, Broward, Florida; O.D.

Ronald Grand, Newport Naval Regional Medical Center, Newport, RI: O.D.

John Griggs, Walter Reed Army Medical Center, Washington, DC; O.D., Pacific College of Optometry

Rodney Gutner, Veterans Administration Hospital, Bedford, MA; O.D., Massachusetts College of Optometry

Edmund Hackman, Veterans Administration Medical Center, Providence, RI; O.D., Massachusetts College of Optometry

Douglas Hoffman, Dorchester House Multi-Service Center; O.D., The New England College of Optometry

Arthur Levinson, Hadassah University Hospital, Jerusalem, Israel; O.D., Massachusetts College of Optometry

Laurence M. Lieberman, Clinical Consultant in Pediatrics: Ed.D., Columbia University

Arthur MacKay, Mary Imogene Bassett Hospital, Cooperstown, NY; O.D., The New England College of Optometry

Daryl Mann, Omni Eye Service, Chattanooga, Tennessee; O.D.

Herbert Myers, Western Massachusetts State Hospital, Westfield, MA; O.D., Massachusetts College of Optometry

Leonard Oshinskie, Veterans Administration Hospital, Newington, CT; O.D., Pennsylvania College of Optometry

John Pietrantonio, East Boston Neighborhood Health Center; O.D., The New England College of Optometry

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William Primpas, Veterans Administration Outpatient Clinic, Boston, MA; O.D., Massachusetts College of Optometry

Harvey Rappoport, Veterans Administration Medical Center, Providence, RI; O.D., Massachusetts College of Optometry

Jeanette Sewell, Dimock Community Health Center, Boston, MA; O.D., The New England College of Optometry

Robert Schnipper, Jacksonville Eye Center, Jacksonville, FL; M.D.

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Gene Stollman, Hadassah Hospital, Jerusalem, Israel; O.D., Illinois College of Optometry

John Streff, S.A. NOEL (National Optometry Educational Learning) Center, Lancaster, OH; O.D., Illinois College of Optometry

Ned Witkin, Health America, Broward, FL; O.D.

Jonas Zucker, Connecticut Visual Health Center, Bridgeport, CT; O.D., Pennsylvania College of Optometry

Visiting Lecturers

George Annas, Visiting Lecturer; J.D., M.P.H., Boston University School of Medicine

J. Andrew Billings, Visiting Lecturer; M.D., Harvard Medical School

Arthur Neufeld, Assistant Professor of Physiology; Ph.D., New York School of Medicine

Stanley Reiser, Visiting Lecturer; M.D., Downstate College of Medicine of the State University of New York

John Stoeckle, Visiting Lecturer; M.D., Harvard Medical School

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